




UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,090	07/14/2003	Sadao Kanbe	9319S-302CPA	4696
27572	7590	09/08/2004	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			DINH, JACK	
P.O. BOX 828			ART UNIT	
BLOOMFIELD HILLS, MI 48303			PAPER NUMBER	
			2873	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/619,090	Applicant(s) KANBE, SADA0	
	Examiner Jack Dinh	Art Unit 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-22 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 14 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0703.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: DETAILED ACTION.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group II (claims 1, 2, and 6-22) in the reply filed on 07/01/04 is acknowledged. The traversal is on the ground(s) that undue burden would not be placed upon the Examiner by maintaining both groups of claims. This is found persuasive and the restriction requirements are withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 4 and 6-9 are rejected under 35 U.S.C. 102(e) as being unpatentable by Albert et al. (US Patent 6,172,798).

(a) Regarding claim 1, Albert et al. (figure 5A) is interpreted as disclosing an electrophoretic display **500** comprising a plurality of microcapsules **510** disposed between a pair of substrates, wherein each microcapsule comprises an insulating fluid **540** and charged particles 530 dispersed in the fluid, and the microcapsules contact at least the substrate arranged at a display face side of the pair of substrates (see figure).

(b) Regarding claim 2, Albert et al. (figure 5A) is interpreted as further disclosing that mutually adjoining microcapsules contact each other (see figure).

(c) Regarding claim 4, Albert et al. (figure 4C) is interpreted as disclosing a method for making an electrophoretic display including a plurality of microcapsules **400** disposed between a pair of substrates **480** and **490**, the method comprising applying a microcapsule dispersion material including a binder and microcapsules dispersed in the binder (col. 2, lines 33-35) on the substrate lying at the display face side of the pair of substrates (see figure) and drying the substrate, and bonding the pair of substrates (col. 15 lines 28-52).

(d) Regarding claim 6, Albert et al. is interpreted as further disclosing an electronic apparatus comprising an electrophoretic display (col. 1, lines 18-31).

(e) Regarding claim 7, Albert et al. (figures 5A-C) is interpreted as disclosing an electrophoretic display comprising a pair of substrates, and a plurality of microcapsules **510** and **550** in which a plurality of particles and fluid are contained, the microcapsules arranged between the substrates, wherein each of the plurality of microcapsules is different in shape and in contact with each other (see figures; col. 2, lines 33-47).

Art Unit: 2873

(f) Regarding claim 8, Albert et al. (figure 5B) is interpreted as further disclosing that each of the microcapsules is deformed so as to fill gaps formed therebetween (col. 15, lines 28-52).

(g) Regarding claim 9, Albert et al. is interpreted as further disclosing that the plurality of particles are electrically charged (col. 8, lines 50-51) and the fluid is colored (col. 8, lines 56-57).

3. Claims 14-16 and 18 are rejected under 35 U.S.C. 102(e) as being unpatentable by Comiskey et al. (US Patent 6,724,519).

(a) Regarding claim 14, Comiskey et al. (figure 1A) is interpreted as disclosing an electrophoretic display comprising a first substrate including an electrode **30** and a second substrate including an electrode **40** opposing the first substrate, the electrodes providing an electric field therebetween, and a plurality of microcapsules dispersed in a binder arranged between the substrates, the plurality of microcapsules each including a first group of charged particles and a second group of charged particles dispersed in a fluid, the first group of charged particles having a charge opposite to the charge of the second group of charged particles, wherein the first group of charged particles migrate in a direction of the electric field and the second group of charged particles migrate in a direction opposite of the electric field (col. 13, lines 43-67).

Art Unit: 2873

(b) Regarding claims 15 and 16, Comiskey et al. is interpreted as further disclosing a first group of positively charged particles and a second group of negatively charged particles wherein the particles in the two groups are different in colors (col. 13, lines 43-67).

(c) Regarding claim 18, Comiskey et al. is interpreted as further disclosing an electronic apparatus comprising an electrophoretic display (col. 1, lines 21-30).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Albert et al. (US Patent 6,172,798).

Regarding claim 3, Albert et al. (figure 4C) is interpreted as disclosing a method for making an electrophoretic display including a plurality of microcapsules **400** disposed between a pair of substrates, the method comprising disposing a spacer **480** between the pair of substrates to bond the pair of substrates, and fixing the pair of substrates while pressing the substrates so that the microcapsules contact the pair of substrates (col. 3, lines 36-42). Although Albert et al. does not explicitly disclose that the spacer having a diameter which is smaller than the diameter of the microcapsules, Albert et al. discloses

Art Unit: 2873

that the spacer cavities are diverse in shapes and sizes (col. 13, lines 66-67 and col. 14, line 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time that the invention was made to provide spacers with smaller diameter than the diameter of the microcapsules, so as to accommodate microcapsules of different sizes and shapes.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Albert et al. (US Patent 6,172,798), as applied in claim 4, in view of Iwasaki et al. (US Patent 5,972,493).

Regarding claim 5, Albert et al. is interpreted as further disclosing the step of applying microcapsule dispersion material (col. 3, lines 47-64). Albert et al. discloses all the claimed limitations except that the microcapsule dispersion includes an emulsion adhesive, and that the thickness of the microcapsule dispersion material is one to three times the diameter of the microcapsules. Within the same field of endeavor, Iwasaki et al. is interpreted as disclosing the teaching of microcapsules including emulsion adhesive (col. 6, lines 60-63). Although Iwasaki et al. does not disclose that the microcapsule dispersion material contains 50% or less by weight of the microcapsules, and the emulsion adhesive after drying contains 10% by volume or less of the microcapsules, or that the microcapsule dispersion material is one to three times the diameter of the microcapsules, such ranges would be within experimental perimeters. It is considered not inventive to discover the optimum ranges by routine experimentations. Therefore, it would have been obvious to one having ordinary skill in the art at the time that the

Art Unit: 2873

invention was made to provide such range, so as to select a preferred compound percentage for the microcapsule dispersion.

6. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albert et al. (US Patent 6,172,798), as applied in claim 7, in view of Comiskey et al. (US Patent 6,724,519).

(a) Regarding claims 10 and 11, Albert et al. is interpreted as disclosing all the claimed limitations, as described above, except that the plurality of particles comprising two groups of different charges and colors. Within the same field of endeavor, Comiskey is interpreted as disclosing an electrophoretic display wherein the plurality of particles comprises a first group of positively charged particles and a second group of negatively charged particles wherein the particles in the two groups are different in colors (col. 13, lines 43-67). Therefore, it would have been obvious to one having ordinary skill in the art at the time that the invention was made to provide two particle groups of different charges and colors, as taught by Comiskey et al., so as to permit an electrophoretic element to display two colors as desired.

(b) Regarding claim 12, Albert et al. is interpreted as further disclosing that the fluid is transparent (col. 8, line 54).

(c) Regarding claim 13, Albert et al. is interpreted as further disclosing an electronic apparatus comprising an electrophoretic display (col. 1, lines 18-31).

7. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Comiskey et al. (US Patent 6,724,519), as applied in claim 14, in view of Albert et al. (US Patent 6,172,798).

Regarding claim 17, Comiskey et al. is interpreted as disclosing all the claimed limitations, as described above, except that each of the microcapsules is deformed. Within the same field of endeavor, Albert et al. (figure 5B-C) is interpreted as disclosing the teaching wherein the microcapsules are deformed. Therefore, it would have been obvious to one having ordinary skill in the art at the time that the invention was made to deform the microcapsules, as taught by Albert et al., so as to fill gaps formed therebetween.

8. Claims 19, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Comiskey et al. (US Patent 6,724,519), in view of Iwasaki et al. (US Patent 5,972,493).

(a) Regarding claim 19, Comiskey et al. is interpreted as disclosing an electrophoretic device comprising a first substrate including a first electrode **30**, a second substrate including a second electrode **40**, the first and second electrode providing a positive or a negative electric field therebetween, a microcapsule dispersion material including a plurality of microcapsules **20**, each of the microcapsules containing at least one first particle and at least one second particle dispersed in a fluid, the first particle being

Art Unit: 2873

positively charged and the second particle being negatively charged such that when the positive electric field is provided, the first particle is migrates away from a direction of the electric field and the second particle migrates toward the direction of the electric field (col. 13, lines 43-67). Comiskey et al. discloses all the claimed limitations except that the microcapsule dispersion includes an emulsion adhesive. Within the same field of endeavor, Iwasaki et al. is interpreted as disclosing the teaching of microcapsules including emulsion adhesive (col. 6, lines 60-63). Although Iwasaki et al. does not discloses that the microcapsule dispersion material contains 50% or less by weight of the microcapsules, and the emulsion adhesive after drying contains 10% by volume or less of the microcapsules, such ranges would be within experimental perimeters. It is considered not inventive to discover the optimum ranges by routine experimentations. Therefore, it would have been obvious to one having ordinary skill in the art at the time that the invention was made to provide such range, so as to select a preferred compound percentage for the microcapsule dispersion.

(b) Regarding claim 20, Comiskey et al. is interpreted as further disclosing the first charged particles and the second charged particles are different in colors (col. 13, lines 43-67).

(c) Regarding claim 22, Comiskey et al. is interpreted as further disclosing an electronic device including an electrophoretic device (col. 1, lines 21-30).

Art Unit: 2873

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Comiskey et al. (US Patent 6,724,519) in view of Iwasaki et al. (US Patent 5,972,493), as applied in claim 19, and further in view of Albert et al. (US Patent 6,172,798).

Regarding claim 21, Comiskey et al. in view of Iwasaki et al. is interpreted as disclosing all the claimed limitations, as described above, except that each of the microcapsules is deformed. Within the same field of endeavor, Albert et al. (figure 5B-C) is interpreted as disclosing the teaching wherein the microcapsules are deformed. Therefore, it would have been obvious to one having ordinary skill in the art at the time that the invention was made to deform the microcapsules, as taught by Albert et al., so as to fill gaps formed therebetween.

Other Information/Remarks


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Dinh whose telephone number is 571-272-2327. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2873

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jack Dinh



Georgia Epps
Supervisory Patent Examiner
Technology Center 2800